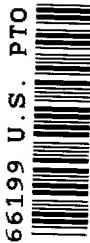


66199 U.S. PTO



06/03/97

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

**PATENT APPLICATION**

Irwin Gerszberg  
Jesse Eugene Russell  
Robert Edward Schroeder

71164 U.S. PTO  
08/868407  
06/03/97

**CASE 38-33-29**

**TITLE** Method And System For Providing Access To A Telecommunications Network

**ASSISTANT COMMISSIONER FOR PATENTS**  
**WASHINGTON, D.C. 20231**

**SIR:**

Enclosed are the following papers relating to the above-named application for patent:

Specification  
2 Informal sheets of drawing(s)  
1 Assignment with Cover Sheet  
Declaration and Power of Attorney  
Information Disclosure Statement  
Associate Power of Attorney

CLAIMS AS FILED				
	NO. FILED	NO. EXTRA	RATE	CALCULATIONS
Total Claims	10 - 20 =	0	x \$22 =	\$0
Independent Claims	2 - 3 =	0	x \$80 =	\$0
Multiple Dependent Claim(s), if applicable			\$260 =	\$0
Basic Fee				\$770
TOTAL FEE:				\$770

Please file the application and charge **AT&T Deposit Account No. 01-2745** the amount of \$770, to cover the filing fee. Duplicate copies of this letter are enclosed. In the event of non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **Deposit Account No. 01-2745** as required to correct the error.

Please address all correspondence to **S. H. Dworetsky, AT&T Corp., P. O. Box 4110, Middletown, New Jersey 07748**. However, telephone calls should be made to me at 201-386-2718.

Respectfully,

  
Alfred G. Steinmetz

Reg. No. 22971

Attorney for Applicant(s)

Date: June 3, 1997

**AT&T Corp.**

**P. O. Box 4110**

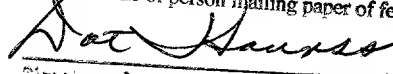
**Middletown, New Jersey 07748**

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I hereby certify that this application is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above is addressed to the Assistant Commissioner for Patents, Washington, DC, 20231, on June 3, 1997

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**METHOD AND SYSTEM FOR PROVIDING  
ACCESS TO A TELECOMMUNICATIONS NETWORK**

**BACKGROUND OF THE INVENTION**

**1. Field of the Invention**

The present invention relates to the field of telecommunications. More particularly, the present invention relates to a system and a method for establishing a connection through a telecommunications network.

**2. Description of the Related Art**

In conventional telecommunications systems, a user desiring fast, efficient telecommunications connection service will often lease a dedicated line from a telephone service provider. For example, the rail industry, trucking industry, overnight mail delivery services, FBI, Secret Service, large utility companies along with various federal, state and local government agencies require that wireless telecommunications be rapidly delivered over a large geographical area. Presently, this is done by leasing dedicated lines from base stations to a central switching location.

The expenses for such a leased line are usually paid on an expensive one-time or monthly basis, and may be disproportionate for the actual usage time for the line since the majority of base stations are sporadically used. Often, multiple base

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stations are connected to one line and these conventional dedicated multi-drop circuits are difficult to reconfigure as the user's requirements change. Additionally, the individual circuit legs of dedicated connections trouble prone with noise, unbalance and are difficult to fault isolate and reroute, tending to prolong service outage(s).

5 Further, there is no network redundancy with dedicated lines because of the high leased facility costs, and expensive maintenance and operation costs. Conventional leased lines also lack inter-networking capability across multi-networks, do not support station mobility (i.e., roaming), and lack enhanced communication features.

10 Consequently, there is a need for rapid telecommunications connections without the attendant expense and other disadvantages associated with conventional leased lines.

### **SUMMARY OF THE INVENTION**

15 The present invention provides rapid telecommunications connections without the expense and other disadvantages associated with conventional leased lines. The advantages of the present invention are provided by a system and a method for connecting a call through a telecommunications network. According to the invention, a base station, connected to a public switched telephone network, includes a call processor, a memory and a transceiver. The memory includes a database containing  
20 dialing instructions for a wireless station for a telephone connection through the public

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switched telephone network to a destination station. The transceiver receives a call request from the wireless station, and the call processor in response to the call request, accesses the database and dials a call for connection through the public switched telephone network to the destination station based on the dialing instructions for the wireless station.

#### **BRIEF DESCRIPTION OF THE DRAWING**

The present invention is illustrated by way of example and not limitation in the accompanying figures in which like reference numerals indicate similar elements and in which:

Figure 1 shows a schematic block diagram of a system for accessing a telecommunications network according to the present invention; and

Figure 2 shows a flow diagram for the operation of a system for accessing a telecommunications network according to the present invention.

#### **DETAILED DESCRIPTION**

The present invention provides an efficient, low-cost solution for providing a priority line connection telecommunications service that can be quickly established via a public switched telephone network (PSTN) without incurring the

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high costs associated with a conventional dedicated-line service. The present invention is advantageously used by a telecommunications user for rapidly establishing time-critical connection paths to a destination station while receiving economical usage rates for a PSTN connection. According to the invention, multiple users may use an established connection through the PSTN service to create a time-shared system that rapidly and effectively establishes and drops call connections in accordance with expected user traffic schedules. Additionally, well-known DTMF detection and removal techniques can be used for further enhancing the rapid, telecommunications interconnection service provided by the present invention.

Figure 1 shows a schematic block diagram of a system for rapidly establishing a connection through a public switched telephone network (PSTN) according to the present invention. PSTN 10 includes a plurality of switches (SW) 11 and central offices (CO) 12 that are interconnected by trunks 13. A plurality of base stations 14 are connected to the central offices in a well-known manner. Base stations 14 communicate in a well-known manner with wireless terminals, of which only wireless terminal 20 is shown. Wireless terminal 20 can be stationary or mobile.

Each base station 14 includes a call processor 15 coupled to a memory 16 and to a transceiver 19. Memory 16 includes a program data space portion 17 where information for call processor 15 is stored, and a memory space portion 18 in which a user database is stored. User database 18 includes information relating to

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user dialing information for each wireless station 20. User database 18 also includes call routing information for each wireless station 20 to selected destination stations.

Call processor 15 performs audio and tone detection, storage, and removal in connection with ISDN and/or POTS line interfacing and digital speech processing.

5 When ISDN service is unavailable, call processor 15 provides a capability for POTS dial up line for voice only and for an X.25 line for a control interface. Transceiver 19 operates in a well-known manner in communicating with mobile station 20.

Figure 2 shows a flow diagram for the operation 21 of a system for accessing a telecommunications network according to the present invention. Upon  
10 receiving a call request from wireless station 20 that uniquely identifies station 20 at step 22, such as a station identification number, for example, call processor 15 validates the call request at step 23 and accesses user database 18 at step 24 for obtaining dialing instructions associated with wireless station 20. Call processor 15 then dials the destination station at step 25 in accordance with the dialing instructions  
15 for the wireless station for establishing a telecommunications connection at step 26, via PSTN 10, to a destination station using a predetermined routing path associated with station 20 and the destination station of the call. Once the call is completed, the connection is disconnected by a termination signal from either wireless station 20 or the destination station at step 27.

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Base station 14 also records user voice signals into memory 16 so that the user may hang up before the connection to the destination station is established, thus reducing waiting time for the user, especially for short conversational purposes. When the connection is established, base station 14 then reproduces the voice signals for the destination station. Additionally, the predetermined connection path may be shared by a plurality of different users on a time-sharing basis where specific time periods are scheduled for each user. The predetermined connection path may be maintained after it is established at step 28, even after user termination signaling, for further enhancing rapid telecommunications connectivity for subsequent calls or scheduled predetermined path connection times in response to daily traffic patterns.

While the present invention has been described in connection with the illustrated embodiments, it will be appreciated and understood that modifications may be made without departing from the true spirit and scope of the invention.

## THE CLAIMS

What is claimed is:

- 1           1.     A method for connecting a call through a telecommunications network  
2     comprising the steps of:  
3                 receiving a request for a call at a base station from a wireless station;  
4                 accessing a database at the base station containing dialing instructions  
5     for the wireless station for a telephone connection through a public switched telephone  
6     network to a destination station; and  
7                 dialing a call for connection through the public switched telephone  
8     network to the destination station based on the dialing instructions for the wireless  
9     station.
- 1           2.     The method according to claim 1, further comprising the step of  
2     establishing a connection for the call from the base station to the destination station  
3     using a predetermined routing path through the public switched telephone network  
4     based on the dialing instructions for the wireless station.
- 1           3.     The method according to claim 2, wherein the step of receiving a  
2     request for a call includes the steps of receiving voice signals, and  
3                 storing the received voice signals,



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4                   the method further comprising the step of:  
5                   transmitting the stored voice signals to the destination station when the  
6                   call is connected through the public switched telephone network.

1                4.     The method according to claim 3, wherein the wireless station is a  
2                mobile station.

1                5.     The method according to claim 3, wherein the step of establishing the  
2                connection for the call is a connection that is time-shared with other wireless stations.

1                6.     A base station connected to a public switched telephone network, the  
2                base station comprising,  
3                        a transceiver receiving a call request from a wireless station;  
4                        a memory containing a database, the database containing dialing  
5                instructions for the wireless station for a telephone connection through the public  
6                switched telephone network to a destination station; and  
7                        a call processor responsive to the call request by accessing the  
8                database and dialing a call for connection through the public switched telephone  
9                network to the destination station based on the dialing instructions for the wireless  
10               station.

1           7.     The base station according to claim 6, wherein a connection established  
2     for the call from the base station to the destination station is a predetermined routing  
3     path through the public switched telephone network based on the dialing instructions  
4     for the wireless station.

1           8.     The base station according to claim 7, wherein the memory stores voice  
2     signals received by the transceiver from the wireless station prior to the call processor  
3     accessing the database, the stored voice signals being transmitted to the destination  
4     station when the call is connected through the public switched telephone network.

1           9.     The base station according to claim 8, wherein the wireless station is a  
2     mobile station.

1           10.    The base station according to claim 8, wherein the connection  
2     established for the call is a connection that is time-shared with other wireless stations.

**METHOD AND SYSTEM FOR PROVIDING  
ACCESS TO A TELECOMMUNICATIONS NETWORK**

**ABSTRACT OF THE DISCLOSURE**

A system and a method for connecting a call through a telecommunications network. A base station, connected to a public switched telephone network, includes a call processor, a memory and a transceiver. The memory includes a database containing dialing instructions for a wireless station for a telephone connection through the public switched telephone network to a destination station. The transceiver receives a call request from the wireless station, and the call processor in response to the call request, accesses the database and dials a call for connection through the public switched telephone network to the destination station based on the dialing instructions for the wireless station.

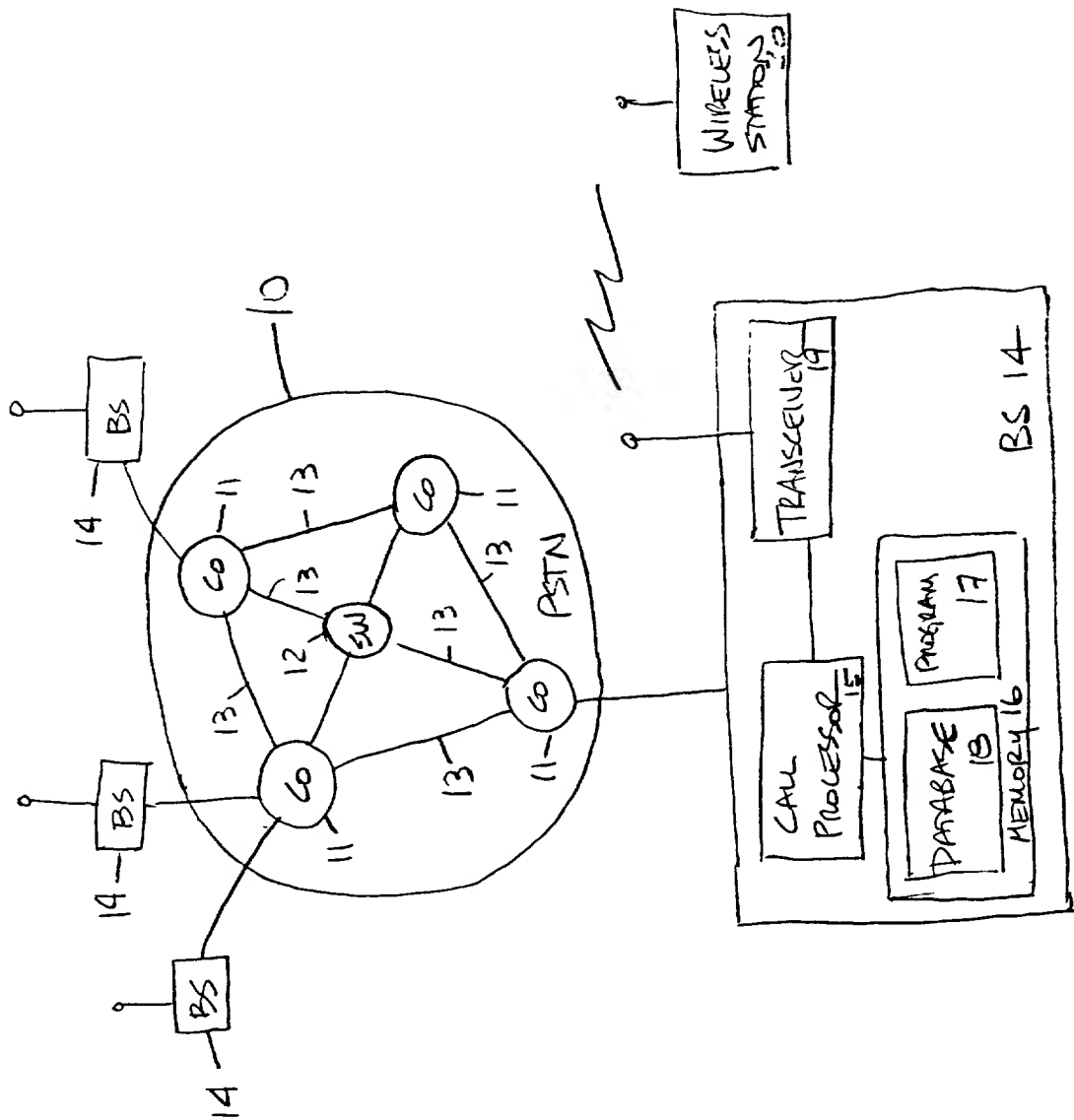


FIG. 1

21 →

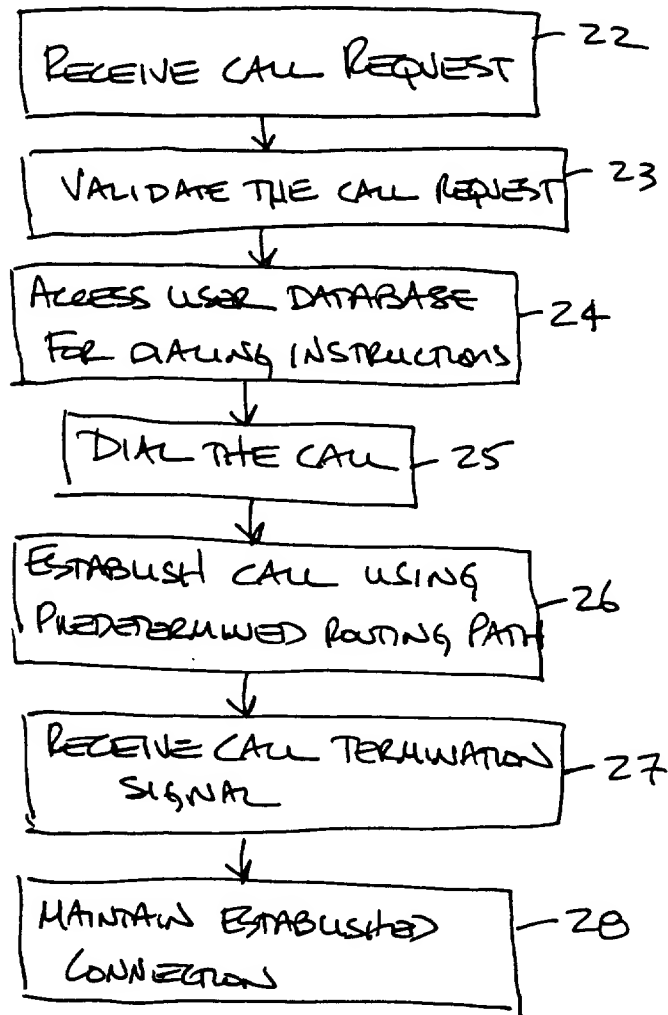


FIG. 2

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

Declaration and Power of Attorney

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled **Method And System For Providing Access To A Telecommunications Network** the specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by an amendment, if any, specifically referred to in this oath or declaration.

I acknowledge the duty to disclose all information known to me which is material to patentability as defined in Title 37, Code of Federal Regulations, 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

None

I hereby claim the benefit under Title 35, United States Code, 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

None

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

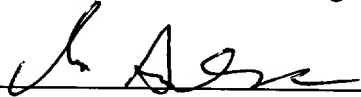
I. Gerszberg 38-33-29

I hereby appoint the following attorney(s) with full power of substitution and revocation, to prosecute said application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith:

Samuel H. Dworetsky	(Reg. No. 27873)
Henry T. Brendzel	(Reg. No. 26844)
Alfred G. Steinmetz	(Reg. No. 22971)

Please address all correspondence to Mr. S. H. Dworetsky, AT&T Corp., P. O. Box 4110, Middletown, New Jersey 07748. Telephone calls should be made to Alfred G. Steinmetz by dialing 201-386-2718.

Full name of 1st joint inventor: Irwin Gerszberg

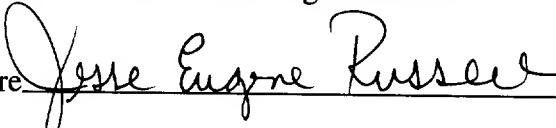
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I. Gerszberg 38-33-29

Full name of 3rd joint inventor: Robert Edward Schroeder

Inventor's signature Robert Edward Schwede Date June 2, 1997  
Residence: Township of Morris, Morris County, New Jersey

**Residence:** Township of Morris, Morris County, New Jersey

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Montville, New Jersey 07045



CASE: Gerszberg 38-33-29

APPLICANT: Irwin GERZBERG et al.

TITLE: METHOD AND SYSTEM FOR PROVIDING ACCESS TO A  
TELECOMMUNICATIONS NETWORK

**ASSOCIATE POWER OF ATTORNEY**

Please recognize Christopher A. Hughes (Reg. No. 26,914), and Joseph P. Curtin (Reg. No. 34,571) as associate attorneys in the above-mentioned application, with full power to prosecute said application, to make alterations and amendments therein, and to transact all business in the Patent and Trademark Office connected therewith.

Telephone calls should be made to the said associate attorney, Joseph P. Curtin, by dialing Area Code (202) 857-7887 .

All written communications, however, are to be addressed to: Samuel H. Dworetsky, Esq., AT&T Corp., P.O. Box 4110, Middletown, New Jersey 07748.

DATE:

June 3, 1997

Alfred G. Steinmetz  
Alfred G. Steinmetz  
Attorney for Applicant(s)  
Reg. No. 22,971

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